

OLD WOMAN'S CREEK SEDIMENT REDUCTION, PHASE ONE

SUMMARY SHEET

1. Objective: To reduce upslope road-induced sedimentation and erosion of Old Woman's Creek. This will ultimately improve steelhead habitat within Old Woman's Creek and coho habitat in lower Gazos Creek.
2. Species Benefitted:.....coho salmon, steelhead, California red-legged frog
3. Work schedule:.....1.5 years
4. County:.....San Mateo County
5. Stream:.....Old Woman's Creek
6. Tributary to:.....Gazos Creek
7. Major Drainage System:.....Gazos Creek Watershed

Background

The Coastal Watershed Council is currently working on a watershed assessment and enhancement plan for the Gazos Creek watershed, funded by the California Department of Fish and Game (CDFG) and the State Coastal Conservancy (SCC). Through the assessment and other work, Old Woman's Creek, a major tributary to lower Gazos Creek, has been identified as contributing excessive sedimentation to Gazos Creek. Aerial photography reconnaissance indicates that successive periods of logging and agriculture occurred between the 1940's through the 1970's, adding an extensive network of skid and haul roads to the watershed, with a peak in the late 1960's (pre-Forest Practice rules). A road assessment has been conducted using an adapted CDFG "Upslope Assessment" (adapted by Redwood National & State Parks Watershed Rehabilitation staff) for the proposed project.

In Mr. Edward Conant's "My Memories of the Gazos Creek and Pigeon Point" (1998), he states that Old Woman's Creek "was a well known creek when I lived in the Gazos in 1916, 1917 and 1918, for its good fishing." Approximately eighty years later, Old Woman's Creek is cited as offering "marginal and limited rearing and spawning habitat" with shallow (<1 foot) pools although fish were observed throughout the lower reach (Nelson, 1994). The stream also exhibits a high degree of channel incision throughout the State Parks property (Coastal Watershed Council, unpublished), a result of past logging practices.

Based on aerial photography reconnaissance, several legacy sediment contributors also exist on private lands within the headwaters of Old Woman's Creek. Through the current watershed assessment, CWC's landowner outreach efforts have revealed that many landowners within the Gazos Creek watershed are extremely wary of state and federal government as well as land trusts and local government. Although CWC was unable to gain access on any private lands within the Old Woman's Creek watershed, Public Advisory Group (PAG) members --including those from the upper OWC watershed--indicated that they would be much more receptive to allowing access and/or participating in restoration projects on their lands if they saw that the State Parks was addressing some of their own problems first.

At present, an unpaved road that parallels Old Woman's Creek is the primary road for vehicles to access the State Park and private properties within the subwatershed. Several skid and haul roads are associated with the primary access road. The two main sources of chronic and episodic sedimentation to Old Woman's Creek within State Parks property are the unpaved road and skid and haul roads between the unpaved road and Old Woman's Creek (see attached site map).

The Old Woman's Creek unpaved road was not originally built for winter travel, yet it receives a relatively high volume of travel year-round. Steep terrain and infrequent and inadequate road drainage are the primary causes of sedimentation to Old Woman's Creek from the unpaved road. Less than ten functioning culverts over 1.7 miles of road are present and there is an urgent need for increased drainage treatments to reduce sedimentation. The inboard ditch, necessary due to the steepness of the area, is clogged and increases the diversion potential in several places.

A restoration and enhancement project on Old Woman's Creek Road would benefit anadromous fisheries in the short- and long-term within Gazos Creek by:

- 1) reducing source sediment to Old Woman's Creek and therefore to lower mainstem Gazos Creek;
- 2) improving steelhead spawning and/or rearing habitat on Old Woman's Creek
- 3) improving coho spawning and/or rearing habitat on lower Gazos Creek
- 4) increasing landowner trust in State agencies such as the Department of Fish and Game and the State Parks;
- 5) fostering longterm stewardship and educating proper unpaved road storm-proofing techniques among private landowners and State Parks maintenance personnel.

Although there are many other haul or skid road-related problems adjacent to Old Woman's Creek, Phase One will address the most readily treatable sites and garner support for further restoration efforts within the watershed.

Proposed Land Use

There are no anticipated land use changes during the next five years. At present, California State Parks owns the road and adjacent property. California State Parks and landowners in the upper Old Woman's Creek watershed have a Memorandum of Understanding (MOU) which allows vehicular access to properties upstream of the State Parks property via Old Woman's Creek unpaved road.

The proposed project is not required as mitigation in a CEQA approval process, Timber Harvest Plan process or otherwise required as mitigation for other activities.

Location

Old Woman's Creek, a three-mile tributary to Gazos Creek is located in southern San Mateo County (see map included). The headwaters of Old Woman's Creek are located in northern Santa Cruz County and are privately owned by approximately twelve separate landowners.

Objectives

The objective of this restoration proposal is to reduce upslope sedimentation within the Old Woman's Creek watershed by storm-proofing 1.7 miles of Old Woman's Creek unpaved road on State Parks property. All storm-proofing measures are proposed with the primary aim of reducing sediment to Old Woman's Creek thereby improving salmonid habitat. Upgrades (e.g., extensive surface rocking) with a primary aim of improving the road for drivability will not be proposed here, although this project may encourage the road association to apply rock and additional rock would somewhat reduce sedimentation.

Project Description

A total of sixty prescriptions are proposed for treatment within the Old Woman's Creek Sediment Reduction, Phase One project. Table One, attached, includes a list of sites, proposed treatments (in many cases, more than one treatment is prescribed), sediment saved, and estimated costs. Treatment choices are based on immediacy of sedimentation or erosion, future sediment yield, and road grade.

The primary treatments prescribed for the Old Woman's Creek unpaved road are:

- Install culvert
- Install rocked, rolling dip
- Outslope road
- Clean inboard ditch
- Install spring drain
- Install trash racks
- Install flared inlet
- Place downspout dissipater

General design drawings for each of these treatments have been included in Table 5.

On steep slopes, drainage measures such as culverts, rolling dips and/or cross drains should be placed every 50-100 feet to reduce road drainage impacts (Neal Youngblood, Redwood National & State Parks, pers. comm., Santa Cruz Resource Conservation District, "Drainage Improvement Guide for Unpaved Roads). Thirty-four drainage relief prescriptions are proposed for the upper 0.8 mile of the unpaved road on State Park property due to the steep terrain (see map). These management practices will include a combination of stream crossing and ditch relief culverts and rocked, rolling dips. Other associated prescriptions will include flared culvert inlets, trash racks, and downspout dissipaters to improve effectiveness and reduce maintenance requirements. Outsloping has only been recommended at select sites due to a combination of steep slopes, need for winter travel and close proximity of road to the creek. On the lower section of the unpaved road, culverts, spring drains and rolling dips will be placed as needed.

Project Tasks

Task 1: Permit Coordination & CEQA Review

Project manager will obtain requisite permits and assist State Parks with CEQA review.

Task 2: Finalize Designs

Contractor will finalize all site specifications for unpaved road storm-proofing.

Task 3: Pre-project Coordination

Project manager will conduct all coordination with State Parks and other resource agency representatives, private landowners, and the consultant, CMY Inc. CWC will also conduct pre-project photo documentation.

Task 4: Project Implementation

Contractor will supervise and implement all road storm proofing, including heavy equipment work and hand labor. CWC staff will assist with project implementation and facilitate project tours with resource managers and landowners involved in the project.

Task 5: Post-project Evaluation

Project manager will conduct post-project evaluation with photo documentation immediately following storm-proof completion and also after the first winter storms.

Task 6: Final Report

A summary report will be completed after completion of post-project evaluation and submitted to the Department of Fish and Game.

List of Permits Needed

Landowner Access Agreement

Waste Discharge Requirement, Central Coast Regional Water Quality Control Board

Coastal Development Permit (County Ordinance Grading Permit included), Co. of San Mateo

Streambed Alteration Permit 1603, Cal. Dept. of Fish and Game

Schedule of Work

Proposed work will begin upon contract award from California Department of Fish and Game and is scheduled to occur for one year. It is necessary for project implementation to occur during the dry season. Therefore, if contract award date does not allow enough time for project implementation during the dry season, implementation will occur during the following dry season instead.

Task	Dates
Project Management	Ongoing throughout project
Task 1. Permit Coordination & CEQA Review	One year
Task 2. Finalize Designs	At least three months prior to project initiation
Task 3. Pre-project Coordination	At least three months prior to project initiation
Task 4. Project Implementation (will require approximately one month of actual construction time)	One to two months
Task 5. Post-project Evaluation	One winter following implementation
Task 6. Final Report	After post-project evaluation

WATERSHED BACKGROUND SUMMARY AND OVERVIEW

1. Project Name: Old Woman's Creek Road Sediment Reduction Project

DFG Project Type: HU

A. Watershed Name: Gazos Creek

B. Watershed Area: 10.5 square miles

C. Project location: T 8 R 5 S: -na- Quadrangle: Franklin Point

D. Total length of perennial blue line streams in watershed: 15.9

E. List known salmonid species present in watershed:

Coho salmon (*Oncorhynchus kisutch*)
Steelhead (*Onchorhynchus mykiss*)

Sources: California Department of Fish and Game, 1998
Jennifer Nelson, CDFG, 1994
Dr. Jerry Smith, 1996, 2001

F. List known historic salmonid species found in watershed:

Coho salmon (*Oncorhynchus kisutch*)
Steelhead (*Onchorhynchus mykiss*)

- G. List known limiting factors that are addressed by the project (source). List item numbers from page A16 in the 2002 Request for Proposals:

4. Excessive sediment yield
5. Spawning requirements
6. Rearing requirements

H. List surveys or plans used to develop this proposal (include sources and dates)

California Department of Fish and Game. 1998. Draft Strategic Plan for Restoration of the Endangered Coho Salmon South of San Francisco Bay. September 1998. Resources Agency, State of California.

Coastal Watershed Council. Gazos Creek Watershed Assessment & Enhancement Plan. In progress. Work to date includes:

Upslope assessment using CDFG Chapter 9. protocol
Salmonid habitat assessment using CDFG protocol
Channel stability analysis

Smith, J. 1996. Distribution and abundance of juvenile coho and steelhead in Gazos, Waddell and Scott Creeks in 1996. Department of Biological Sciences, San Jose State University.

Smith, Jerry. 2001. Distribution and abundance of juvenile coho and steelhead in Gazos. Department of Biological Sciences, San Jose State University.

- I. List percent of the hydrologic watershed area included in the proposal: 30%
and/or the length of blue line stream in affected project reach: 30%
- J. Watershed ownership percentages: Federal: 0% State: 100% Private: 0%
- K. Provide the percentage of the hydrologic watershed area with landowners supportive of proposal and project: 100%
- L. Attach a list and area map of landowners granting access to project area

Landowners granting access:

Landowner Name	Contact Person	Status of Agreement Form
1. State Parks	Victoria Seidman, Resource Ecologist	-Landowner access agreement included -Upslope erosion control agreement will be sent within one week

2. Watershed Land Use:

- A. List current major land uses in the hydrologic unit where work is proposed.

Recreation, Developments (road infrastructure for rural residential parcels upstream)

- B. List planned major land uses in the hydrologic unit where work is proposed.

Continuation of the current land uses: Recreation, road access

- C. Is the work in this proposal required as mitigation in a CEQA approval process, Timber Harvest Plan, or other required mitigation activity? Yes: No: X

3. Proposal Objective:

- A. Briefly state the project objective, and explain how it is consistent with the declared project type.

The objective of this restoration proposal is to reduce upslope sedimentation within the Old Woman's Creek watershed by storm-proofing 1.7 miles of Old Woman's Creek unpaved road on State Parks property. This is an upslope restoration project that will treat "source sediment."

- B. List keystone fishery problems and how they will be addressed by the project.

Lack of spawning and rearing habitat in Old Woman's Creek and lower Gazos Creek due to excessive sedimentation will be indirectly enhanced by limiting the amount of sediment entering Old Woman's Creek.

4. Project Description:

- A. List DFG acceptable protocols that were used in proposal development or will be used in project implementation (document in the text of the proposal how these protocols were/will be used):

Upslope Assessment
Habitat Assessment

- B. List the specific contract products to be delivered by the project.

The following list of tasks will be provided through this project.

- Task 1.....Permits & CEQA Review for project
- Task 2..... Designs for sites
- Task 3..... Quarterly report of project progress
- Task 4.....Storm-proofing of 1.7 miles of road
- Task 5..... Photo & written documentation of site
- Task 6..... Final Report

1. Provide clear directions of the route used to access the watershed or stream, and the project site.

From Half Moon Bay, CA, proceed south on Highway One 24 miles to Gazos Creek Road. Head east on Gazos Creek Road 2.0 miles. Pass the Cloverdale Road junction and turn south on Old Woman’s Creek Road.

From Santa Cruz, CA, proceed north on Highway One 25 miles to Gazos Creek Road. Head east on Gazos Creek Road 2.0 miles. Pass the Cloverdale Road junction and turn south on Old Woman’s Creek Road.

Site Number	Proposed Treatment #1	Proposed Treatment #2	Proposed Treatment #3	Proposed Treatment #4	Proposed Treatment #5	Sediment Saved (cu yd)
Begin: County line/Gate						
	install 18" culvert	install trash rack	downspout dissipator			
GAZ-01-00-01	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		150
GAZ-01-00-02	install 18" culvert	install flared inlet	rocked, rolling dip	downspout dissipator		100
GAZ-01-00-03	replace 18" culvert	install trash rack	rocked, rolling dip			200
	Install 12" culvert	install trash rack	rocked, rolling dip			
	Install 12" culvert	install trash rack	rocked, rolling dip			
	rocked, rolling dip					
	rocked rolling dip					
GAZ-01-00-04	install flared inlet	install trash rack	rocked, rolling dip	downspout dissipator		100
	Install 12" culvert	install trash rack	rocked, rolling dip			
	Install 12" culvert	install trash rack	rocked, rolling dip			
	rocked, rolling dip					
GAZ-01-00-05 to -07 (450 ft)	outslope road	raise road prism to allow i/b ditch to drain water	rock road			600
	Install 12" culvert	rocked, rolling dip	install trash rack			
GAZ-01-00-05	Install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		225
	rocked, rolling dip					
GAZ-01-00-06	install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		25
	rocked, rolling dip					
GAZ-01-00-07	install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		40
	Install 12" culvert	install trash rack	rocked, rolling dip			
	Install 12" culvert	install trash rack	rocked, rolling dip			
	rocked, rolling dip					
	rocked rolling dip					
GAZ-01-00-08	install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		100
	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		
GAZ-01-00-09	install trash rack					150

	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		
GAZ-01-00-010	install 18" culvert	install trash rack	install flared inlet	inslope road (50ft)		830
GAZ-01-00-011	install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		1025
	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		
	rocked, rolling dip					
GAZ-01-00-012	install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		250
	Install 12" culvert					
GAZ-01-00-013	install trash rack	install flared inlet (18" culvert)	place downspout dissipator	rocked, rolling dip		350
	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		
	rocked, rolling dip					
GAZ-01-00-014	outslope road (265 ft from skid road 009 to -014)	rolling dip	rock o/s portion of road			300
GAZ-01-00-015	replace 12" culvert	rocked, rolling dip				20
GAZ-01-00-016 to -020 (500 ft)	outslope road	rock road				425
GAZ-01-00-16	rolling dip					30
GAZ-01-00-40	install 18" culvert	install trash rack	rocked, rolling dip	downspout dissipator		25
GAZ-01-00-017	rolling dip					30
GAZ-01-00-018	rolling dip					30
GAZ-01-00-019	rolling dip					50
GAZ-01-00-020	rolling dip					20
GAZ-01-00-021	spring drain	rocked, rolling dip				30
GAZ-01-00-022	spring drain	rocked, rolling dip				20
GAZ-01-00-023	spring drain	rocked, rolling dip	brush layering at downspout	(brush layering area= 54 sq.ft)		95
GAZ-01-00-024	excavate crossing fill	install 18" culvert	rocked, rolling dip	install flared inlet	brush layering at downspout (area=82 sq. ft)	5000

Pine Gully GAZ-01-00-025						5010
GAZ-01-00-026	Install 12" culvert	install trash rack	rocked, rolling dip	downspout dissipator		35
GAZ-01-00-027	rocked, rolling dip					15
GAZ-01-00-028	replace 12" culvert	rocked, rolling dip				370
GAZ-01-00-029						885
GAZ-01-00-030	spring drain	rocked, rolling dip				15
GAZ-01-00-031	spring drain	rocked, rolling dip				40
GAZ-01-00-032	rocked, rolling dip					20
GAZ-01-00-033	rocked, rolling dip	repair downspout				15
GAZ-01-00-034	rocked, rolling dip					75
GAZ-01-00-035	install 18" culvert	install flared inlet	rocked, rolling dip	downspout dissipator		110
GAZ-01-00-036	spring drain	rocked, rolling dip				25
GAZ-01-00-037	Install 12" culvert	rocked, rolling dip				30
GAZ-01-00-038	rocked, rolling dip					20
GAZ-01-00-039						150
GAZ-01-00-036 to bridge (400ft)	reconstruct road prism	rock road				
GAZ-01-00-01 to -036 (1.7 miles)	Clean inboard ditch throughout section of State Parks truck trail					
End: Bridge at Gazos Creek						

Chronic
Erosion:
A = Erosion
Area

T = Time (10
years)

Sediment Saved Formula is
 $(A \cdot E) / 27 \cdot T \cdot D$
E = 0.03 (Native Surface roads
erosion or lowering rate ft/yr)

D = Delivery Ratio

(50% for >250' to
stream)
(75% for 150' to 250' to
stream crossing)
100% for stream
crossings and < 150' to
stream)

Total

17035